



Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

AFRL SUPPORTS AWARD-WINNING TEAM



AFRL, Northrop Grumman, and a government/industry team won the Turning Goals Into Reality Award for outstanding contributions toward the National Aeronautics and Space Administration's (NASA) goal of revolutionizing aviation through noise reduction. NASA presents this award yearly to individuals or groups nationwide who made outstanding progress toward achieving NASA's program goals.



Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

The team won the award for its shaped sonic boom demonstration (SSBD) project. SSBD is an ongoing study of how the shape of supersonic aircraft affects the sonic boom it creates by breaking the sound barrier. They collected extensive data while a modified Northrop Grumman F-5E Tiger II aircraft flew numerous supersonic flights. The team proved the theory that altering the shape of a supersonic aircraft can lessen its sonic boom. Scientists are using the collected data to design quieter supersonic aircraft. For its role in the effort, AFRL provided contract support to the project and made all necessary flight test arrangements.

Background

An aircraft creates air pressure waves as it travels through the air, just as a ship's bow creates waves in the water. When the aircraft flies faster than the speed of sound, these waves combine to form shock waves. These shock waves create a sonic boom, which creates noise pollution and can cause structural damage. For this reason, supersonic aircraft do not generally fly over highly populated areas. Successfully limiting sonic booms would open more airspace to supersonic aircraft, increasing their uses for the military and private industry.

Air Vehicles
Awards and Recognition

Additional Information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (05-VA-01)